HASSAYAMPA RIVER WATERSHED

The Hassayampa River watershed drains an area of approximately 1,470 square miles in central Arizona. The headwaters originate in the northern Bradshaw Mountains and flow southward through the Upper Hassayampa groundwater basin to the Gila River within the Phoenix AMA. The watershed boundaries are the Bradshaw Mountains to the north and east, the White Tanks to the southeast, and the Weaver, Date Creek, Vulture and Big Horn Mountains to the west. For planning purposes, this watershed is divided into two parts: the Central highlands planning area, and the Phoenix AMA.

Seven miles downstream from Wickenburg, a major fault crosses the Hassayampa River at a place called "the Narrows." The fault is downthrown to the south and virtually the entire runoff of the Hassayampa River sinks into the bed of the river and recharges the aquifer system (Halpenny and Halpenny, 1988). The Narrows is where the Hassayampa River enters the broad Hassayampa Plain and the Phoenix AMA.

STREAMFLOW CHARACTERISTICS

Perennial flow occurs at only a few locations within the Hassayampa River watershed (Figure 4). Table 9 lists these reaches.

TABLE 9
PERENNIAL STREAM REACHES IN THE HASSAYAMPA RIVER WATERSHED

Perennial Stream Reach	Length (miles)
Hassayampa River (3 reaches)	14
Minnehaha Creek	1

Source: Brown and others, 1981

There is a substantial network of smaller tributary washes that drain the basin. These washes are ephemeral and flow mainly in response to summer rainstorms. Most of the runoff in these washes infiltrates into the ground before reaching the Hassayampa River (Halpenny and Halpenny, 1988).

There have been several streamgages on the Hassayampa River at various locations since 1910. The U.S. Geological Survey has established and abandoned at least eight gages upstream from the Hassayampa Plain. Currently, the U.S. Geological Survey maintains two gages: 09516500 is near Morristown, seven miles south of Wickenburg, and 09517000 is near Arlington, 1.8 miles upstream from the Gila River. Both gages record only flood runoff events and do not record flows that average less than 500 cubic feet per second in 24 hours (Halpenny and Halpenny, 1988).

The average annual runoff for the upper Hassayampa watershed has been estimated from a compilation of gaging records from 1939 through 1982. A 44-year rounded average of 16,800 acre-feet per year flows into the Hassayampa Plain and infiltrates into the groundwater aquifer. Flow rarely reaches the Gila River confluence during storm runoff. Most years there is zero flow across the Hassayampa Plain (Halpenny and Halpenny, 1988). However, irrigation return flow from Buckeye Irrigation Drainage District and Roosevelt Irrigation District does reach the Gila River via the Hassayampa River.

WATER QUALITY

Low dissolved oxygen levels and high ammonia concentrations have been recorded in a section of the Hassayampa River near Wickenburg. This may be due to discharge of Wickenburg's wastewater treatment plant into the Hassayampa River (Arizona Department of Environmental Quality, 1990).